

SEQUENCE LISTING

<110> Hadasit Ltd.

<120> Livin-derived peptides, compositions and uses thereof

<130> 16033-WO-03

<150> IL156263

<151> 2003-06-02

<160> 11

<170> PatentIn version 3.1

<210> 1

<211> 246

<212> PRT

<213> Homo sapiens

<400> 1

Gly Gln Ile Leu Gly Gln Leu Arg Pro Leu Thr Glu Glu Glu
 Glu Glu

1 5 10
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Glu Gly Ala Gly Ala Thr Leu Ser Arg Gly Pro Ala Phe Pro
 Gly Met

20 25 30

Gly Ser Glu Glu Leu Arg Leu Ala Ser Phe Tyr Asp Trp Pro
 Leu Thr

35 40 45

Ala Glu Val Pro Pro Glu Leu Leu Ala Ala Ala Gly Phe Phe
 His Thr

50 55 60

Gly His Gln Asp Lys Val Arg Cys Phe Phe Cys Tyr Gly Gly
 Leu Gln

65 70 75
 80

Ser Trp Lys Arg Gly Asp Asp Pro Trp Thr Glu His Ala Lys
Trp Phe

85

90

95

Pro Ser Cys Gln Phe Leu Leu Arg Ser Lys Gly Arg Asp Phe
Val His

100

105

110

Ser Val Gln Glu Thr His Ser Gln Leu Leu Gly Ser Trp Asp
Pro Trp

115

120

125

Glu Glu Pro Glu Asp Ala Ala Pro Val Ala Pro Ser Val Pro
Ala Ser

130

135

140

Gly Tyr Pro Glu Leu Pro Thr Pro Arg Arg Glu Val Gln Ser
Glu Ser

145

150

155

160

Ala Gln Glu Pro Gly Gly Val Ser Pro Ala Glu Ala Gln Arg
Ala Trp

165

170

175

Trp Val Leu Glu Pro Pro Gly Ala Arg Asp Val Glu Ala Gln
Leu Arg

180

185

190

Arg Leu Gln Glu Glu Arg Thr Cys Lys Val Cys Leu Asp Arg
Ala Val

195

200

205

Ser Ile Val Phe Val Pro Cys Gly His Leu Val Cys Ala Glu
Cys Ala

210

215

220

Pro Gly Leu Gln Leu Cys Pro Ile Cys Arg Ala Pro Val Arg
 Ser Arg
 225 230 235
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Val Arg Thr Phe Leu Ser
 245

<210> 2
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 <212> PRT
 <213> Homo sapiens

<400> 2

Gly Gln Ile Leu Gly Gln Leu Arg Pro Leu Thr Glu Glu Glu
 Glu Glu
 1 5 10
 15

Glu Gly Ala Gly Ala Thr Leu Ser Arg Gly Pro Ala Phe Pro
 Gly Met
 20 25 30

Gly Ser Glu Glu Leu Arg Leu Ala Ser Phe Tyr Asp Trp Pro
 Leu Thr
 35 40 45

Ala Glu Val Pro Pro Glu Leu Leu Ala Ala Ala Gly Phe Phe
 His Thr
 50 55 60

Gly His Gln Asp Lys Val Arg Cys Phe Phe Cys Tyr Gly Gly
 Leu Gln
 65 70 75
 80

Ser Trp Lys Arg Gly Asp Asp Pro Trp Thr Glu His Ala Lys
 Trp Phe

95	85	90
Pro Ser Cys Gln Phe Leu Leu Arg Ser Lys Gly Arg Asp Phe		
Val His		
100	105	110
Ser Val Gln Glu Thr His Ser Gln Leu Leu Gly Ser Trp Asp		
Pro Trp		
115	120	125
Glu Glu Pro Glu Asp Ala Ala Pro Val Ala Pro Ser Val Pro		
Ala Ser		
130	135	140
Gly Tyr Pro Glu Leu Pro Thr Pro Arg Arg Glu Val Gln Ser		
Glu Ser		
145	150	155
160		
Ala Gln Glu Pro Gly Ala Arg Asp Val Glu Ala Gln Leu Arg		
Arg Leu		
175	165	170
Gln Glu Glu Arg Thr Cys Lys Val Cys Leu Asp Arg Ala Val		
Ser Ile		
180	185	190
Val Phe Val Pro Cys Gly His Leu Val Cys Ala Glu Cys Ala		
Pro Gly		
195	200	205
Leu Gln Leu Cys Pro Ile Cys Arg Ala Pro Val Arg Ser Arg		
Val Arg		
210	215	220

Thr Phe Leu Ser
225

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<212> PRT
<213> Homo sapiens

<400> 3

Met Gly Pro Lys Asp Ser Ala Lys Cys Leu His Arg Gly Pro
Gln Pro
1 5 10
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Ser His Trp Ala Ala Gly Asp Gly Pro Thr Gln Glu Arg Cys
Gly Pro
20 25 30

Arg Ser Leu Gly Ser Pro Val Leu Gly Leu Asp Thr Cys Arg
Ala Trp
35 40 45

Asp His Val Asp Gly Gln Ile Leu Gly Gln Leu Arg Pro Leu
Thr Glu
50 55 60

Glu Glu Glu Glu Glu Gly Ala Gly Ala Thr Leu Ser Arg Gly
Pro Ala
65 70 75
80

Phe Pro Gly Met Gly Ser Glu Glu Leu Arg Leu Ala Ser Phe
Tyr Asp
85 90
95

Trp Pro Leu Thr Ala Glu Val Pro Pro Glu Leu Leu Ala Ala
Ala Gly
100 105 110

Phe Phe His Thr Gly His Gln Asp Lys Val Arg Cys Phe Phe
 Cys Tyr
 115 120 125

Gly Gly Leu Gln Ser Trp Lys Arg Gly Asp Asp Pro Trp Thr
 Glu His
 130 135 140

Ala Lys Trp Phe Pro Ser Cys Gln Phe Leu Leu Arg Ser Lys
 Gly Arg
 145 150 155
 160

Asp Phe Val His Ser Val Gln Glu Thr His Ser Gln Leu Leu
 Gly Ser
 165 170
 175

Trp Asp Pro Trp Glu Glu Pro Glu Asp Ala Ala Pro Val Ala
 Pro Ser
 180 185 190

Val Pro Ala Ser Gly Tyr Pro Glu Leu Pro Thr Pro Arg Arg
 Glu Val
 195 200 205

Gln Ser Glu Ser Ala Gln Glu Pro Gly Gly Val Ser Pro Ala
 Glu Ala
 210 215 220

Gln Arg Ala Trp Trp Val Leu Glu Pro Pro Gly Ala Arg Asp
 Val Glu
 225 230 235
 240

Ala Gln Leu Arg Arg Leu Gln Glu Glu Arg Thr Cys Lys Val
 Cys Leu
 245 250

255

Asp Arg Ala Val Ser Ile Val Phe Val Pro Cys Gly His Leu
 Val Cys
 260 265 270

Ala Glu Cys Ala Pro Gly Leu Gln Leu Cys Pro Ile Cys Arg
 Ala Pro
 275 280 285

Val Arg Ser Arg Val Arg Thr Phe Leu Ser
 290 295

<210> 4
 <211> 280
 <212> PRT
 <213> Homo sapiens

<400> 4

Met Gly Pro Lys Asp Ser Ala Lys Cys Leu His Arg Gly Pro
 Gln Pro
 1 5 10
 15

Ser His Trp Ala Ala Gly Asp Gly Pro Thr Gln Glu Arg Cys
 Gly Pro
 20 25 30

Arg Ser Leu Gly Ser Pro Val Leu Gly Leu Asp Thr Cys Arg
 Ala Trp
 35 40 45

Asp His Val Asp Gly Gln Ile Leu Gly Gln Leu Arg Pro Leu
 Thr Glu
 50 55 60

Glu Glu Glu Glu Glu Gly Ala Gly Ala Thr Leu Ser Arg Gly
 Pro Ala

65					70						75			
	80													
Phe	Pro	Gly	Met	Gly	Ser	Glu	Glu	Leu	Arg	Leu	Ala	Ser	Phe	
Tyr	Asp													
				85					90					
95														
Trp	Pro	Leu	Thr	Ala	Glu	Val	Pro	Pro	Glu	Leu	Leu	Ala	Ala	
Ala	Gly													
				100					105				110	
Phe	Phe	His	Thr	Gly	His	Gln	Asp	Lys	Val	Arg	Cys	Phe	Phe	
Cys	Tyr													
		115					120					125		
Gly	Gly	Leu	Gln	Ser	Trp	Lys	Arg	Gly	Asp	Asp	Pro	Trp	Thr	
Glu	His													
		130					135					140		
Ala	Lys	Trp	Phe	Pro	Ser	Cys	Gln	Phe	Leu	Leu	Arg	Ser	Lys	
Gly	Arg													
145						150					155			
		160												
Asp	Phe	Val	His	Ser	Val	Gln	Glu	Thr	His	Ser	Gln	Leu	Leu	
Gly	Ser													
				165					170					
175														
Trp	Asp	Pro	Trp	Glu	Glu	Pro	Glu	Asp	Ala	Ala	Pro	Val	Ala	
Pro	Ser													
				180					185				190	
Val	Pro	Ala	Ser	Gly	Tyr	Pro	Glu	Leu	Pro	Thr	Pro	Arg	Arg	
Glu	Val													
		195					200					205		

Gln Ser Glu Ser Ala Gln Glu Pro Gly Ala Arg Asp Val Glu
 Ala Gln
 210 215 220

Leu Arg Arg Leu Gln Glu Glu Arg Thr Cys Lys Val Cys Leu
 Asp Arg
 225 230 235
 240

Ala Val Ser Ile Val Phe Val Pro Cys Gly His Leu Val Cys
 Ala Glu
 245 250
 255

Cys Ala Pro Gly Leu Gln Leu Cys Pro Ile Cys Arg Ala Pro
 Val Arg
 260 265 270

Ser Arg Val Arg Thr Phe Leu Ser
 275 280

<210> 5
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer for site-directed mutagenesis

<400> 5
 ggggaattct ggtcagagcc agtggtc
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<210> 6
 <211> 24
 <212> DNA
 <213> Artificial Sequence

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 <223> Primer for site-directed mutagenesis

<400> 6
 gggggatccg gagcccactc tgca
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<210> 7
<211> 18
<212> DNA
<213> Artificial Sequence

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<223> Megaprimer to introduce mutation D52E

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cgtggaaggg cagatcct
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<210> 8
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<212> DNA
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<223> Megaprimer to introduce mutation D238E

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<210> 9
<211> 41
<212> DNA
<213> Artificial Sequence .

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<223> Primer to construct cleavage fragment

<400> 9
ggggaattca gtgttcctc catggggcag atcctgggcc a
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<212> DNA
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<223> Livin-Exp-F

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tggtgatcc atgggaccta aagaca
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<223> Livin-Exp-R

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ggcaaagctt ctaggacagg aaggtgc
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